

Short term decline of performance in the spatial Temporal Order Judgment task

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Studies of temporal cognition suggest that incoming stimuli undergo different sampling procedures and the resolution of the processing system defines not only the speed but also the accuracy of perception. The spatial version of the Temporal Order Judgment (sTOJ) task is a promising candidate to capture individual differences in temporal resolution. Because, the reliability of the sTOJ threshold (i.e. minimal time interval that allows a correct order decision) measurement is rather low, therefore, in our first experiment, we measured it multiple times. Surprisingly, the performance of the participants declined during the four consecutive measurements (within circa 10 minutes). This result was replicated in our second study, even though participants were highly task-oriented during the whole experiment (as assessed by the Achievement Goal Questionnaire). We also found that mandatory pauses and/or feedback can eliminate this effect. These results suggest that this measurement is either highly susceptible to changes in attentional demand or that the temporal resolution of the auditory system changes together with its energetic background. Based on either of these explanations, the sTOJ threshold measurement has the potential to serve as a quickly assessable indicator of momentary cognitive fitness.